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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/576,192	04/17/2006	Akihiro Teramachi	062412	8606
38834	7590	11/02/2007	EXAMINER	
WESTERMAN, HATTORI, DANIELS & ADRIAN, LLP			JOYCE, WILLIAM C	
1250 CONNECTICUT AVENUE, NW			ART UNIT	PAPER NUMBER
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WASHINGTON, DC 20036				
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11/02/2007		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/576,192	TERAMACHI ET AL.	
	<b>Examiner</b> William C. Joyce	<b>Art Unit</b> 3682	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 06 August 2007.  
 2a) This action is **FINAL**.      2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1 and 4-16 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 1,4-8,10,11 and 13-16 is/are rejected.  
 7) Claim(s) 9 and 12 is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 5) <input type="checkbox"/> Notice of Informal Patent Application |
|  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

This Office Action is in response to the amendment filed August 6, 2007 for the above identified patent application.

### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 11 and 15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 11 and 15, line 2, the limitation "the space" lacks proper antecedent basis.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 5, 6, 8, 10 and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by Japanese Reference 2000-161459 (JP '459).

JP '459 illustrates a roller screw comprising: a screw shaft (2) having an outer peripheral surface in which a spiral roller rolling groove is formed; a nut member (4)

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having an inner peripheral surface in which a spiral loaded roller rolling groove is formed so as to oppose to the roller rolling groove of the screw shaft; a return member (14) connecting one and another ends of a loaded roller rolling groove of the nut member and configured to circulate a roller rolling the loaded roller rolling passage between the roller rolling groove of the screw shaft and the loaded roller rolling groove of the nut member; and a plurality of rollers (7) disposed in the loaded roller rolling passage and the return member, wherein a spacer (18,19) is disposed between a pair of adjacent rollers so as to prevent the paired rollers from contacting each other, the spacer being formed with concave portions at both ends in an advancing direction thereof so as to contact an outer peripheral surface of the roller, and the roller contacts the concave portions along an entire length in the axial direction thereof, a pair of axes of the rollers being disposed in a pair of planes substantially parallel with each other in a state that the paired rollers disposed at both ends in the advancing direction contact the concave portions of the spacer, the axes of the pair of adjacent rollers being perpendicular to each other when viewed from a roller advancing direction.

With respect to claim 5, figures 2-3 of JP '459 illustrate the claimed lead angle.

With respect to claim 6, figure 16 illustrates a square return passage.

With respect to claim 8, figures 3 and 8 show the return passage having a curved shape and therefore is considered to be twisted.

With respect to claim 10, figure 4 illustrates a notch formed in a central portion of the spacer.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 4-6, and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Greby (USP 3,192,791) in view of Agari (USP 5,927,858).

Greby discloses a roller screw comprising: a screw shaft (36) having an outer peripheral surface in which a spiral roller rolling groove is formed; a nut member (26) having an inner peripheral surface in which a spiral loaded roller rolling groove is formed so as to oppose to the roller rolling groove of the screw shaft; a return member (46) connecting one and another ends of a loaded roller rolling groove of the nut member and configured to circulate a roller rolling the loaded roller rolling passage between the roller rolling groove of the screw shaft and the loaded roller rolling groove of the nut member; and a plurality of rollers (28) disposed in the loaded roller rolling passage and the return member, wherein the return member is twisted.

Greby does not disclose a spacer being disposed between a pair of adjacent rollers so as to prevent the paired rollers from contacting each other, however it was known in the art to provide spacers between rolling members, such as rollers. For example, the prior art to Agari discloses a motion device having rolling members formed as either rollers or balls, wherein the rolling members are spaced by spacers, the spacers having a tapered portion (43,53) for providing smooth operation of the spacers

in a recirculation passage. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the screw device of Greby with spacers having a tapered portion, as taught by Agari, motivation being to reduce the friction between the rolling members and to provide a smooth operating device.

7. Claims 7, 13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese Reference 2000-161459 (JP '459) in view of Takagi et al. (USP 6,415,676).

As described above, JP '459 illustrates a roller screw. The roller screw of JP '459 fails to teach lubricating holding grooves formed of the surface of the spacer, but it was known to provide the claimed grooves. For example, the prior art to Takagi et al. illustrates in Figure 2 a spacer (28) having a plurality of lubricating holding grooves (24). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the spacers of JP '459 with lubricating grooves, as taught by Takagi et al., motivation being to provide better lubrication to the relatively moving components.

#### ***Allowable Subject Matter***

8. Claims 9 and 12 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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9. Claims 11 and 15 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

***Conclusion***

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William C. Joyce whose telephone number is (571) 272-7107. The examiner can normally be reached on Monday - Thursday 7:30-5:00.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Ridley can be reached on (571) 272-6917. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
William C. Joyce 10/28/07